CLAIMS:

1. A method of forming a security image from two or more images comprising:

manipulating tonal values of each image element of a first image to take values within a first set of tonal values;

manipulating tonal values of each image element of a second image to take values within a second set of tonal values; and

forming a security image from the manipulated tonal values of the first and second images, the first and second sets of tonal values being selected so that at least one of the first and second images is concealed in the security image.

2. A method as claimed in claim 1 comprising selecting the first image to be a visible image and selecting the second image to be an encoded image which can be decoded using a decoding screen so that the encoded image is the image concealed in the security image.

3. A method as claimed in claim 2 further comprising:

manipulating tonal values of each image element of at least one additional image to take values within an additional set of tonal values; and

forming the security image from the manipulated tonal values of the first, second and at least one additional images.

4. A method as claimed in claim 3 wherein at least one additional image is selected to be a visible image.

5. A method as claimed in claim 3 wherein at least one additional image is selected to be a concealed image.

6. A method as claimed in claim 2, wherein the encoded image is selected to be a digitally modulated image.

7. A method as claimed in claim 2 comprising converting a latent image to obtain the encoded image.

8. A method as claimed in claim 2 wherein the first set of tonal values is selected to be larger than the second set of tonal values.

9. A method as claimed in claim 8 wherein the ratio of the first set of tonal values to the second set of tonal values is in the range of 55:45 to 80:20

10. A method as claimed in claim 8 wherein the ratio of the first set of tonal values to the second set of tonal values is in the range of 60:40 to 70:30.

11. A method as claimed in claim 1 wherein the number of tones in the first and second sets is equal to the number of available tones for the image representation technique.

12. A method as claimed in claim 11 wherein each of the first and second sets of tonal values are ranges of consecutive tones, the sum of the ranges being equal to the number of available tones in the range of tones for the image representation technique.

13. A method as claimed in claim 11 wherein at least one of the first and second sets of tonal values comprises two or more ranges of consecutive tones.

14. A method as claimed in claim 12, wherein the first and second images are full tone range images and each of the first and second images are manipulated by

proportionally compressing the values of the tones to take values within the first and second ranges.

15. A method as claimed in claim 14 wherein the security image is formed by adding the tonal values of corresponding image elements so that they take values within the full tonal range.

16. A method as claimed in claim 1 comprising selecting the tonal values of the first and second images to be distinct from one another and forming the security image by interleaving manipulated image elements of the first and second images.

17. A method as claimed in claim 1 comprising concealing a plurality of images within the security image in such a manner that they can each be decoded by a processing means.

18. A method as claimed in claim 17 comprising combining a plurality of two tone images including at least said first image and said second image, and manipulating each image element of each two tone image to take one of the values of a bit, and

forming the security image by adding the values of the respective bits to obtain a grey scale value for each image elements.

19. A method as claimed in claim 17 comprising allocating segments of a code for defining the tonal value of each image element of the security image as the sets of tonal values for respective ones of the plurality of images so that the segments can be combined to form a composite tonal value of each image element without disturbing the values of the segments so they, and hence the plurality of images, can be decoded.

20. A method as claimed in claim 1 wherein the tonal values are selected to be grey scale values.

21. A method as claimed in claim 1 wherein the tonal values are selected to be colour values.

22. A security device comprising:

a security image formed from manipulated tonal values of first and second images, the first and second images being manipulated to take values within the first and second sets of tonal values, the sets of tonal values being selected so that at least one of the first and second images is concealed in the security image.

23. A security device as claimed in claim 22 wherein the first image is a visible image and the second image is an encoded image which can be decoded using a decoding screen so that the encoded image is the image concealed in the security image.

24. A security device as claimed in claim 23 wherein the encoded image is a digitally modulated image.

25. A security device as claimed in claim 22 wherein the first set of tonal values is larger than the second set of tonal values.

26. A security device as claimed in claim 25 wherein the ratio of the first set of tonal values to the second set of tonal values is in the range of 55:45 to 80:20

27. A security device as claimed in claim 25 wherein the ratio of the first set of tonal values to the second set of tonal values is in the range of 60:40 to 70:30.

28. A security device as claimed in claim 22 wherein the number of tones in the first and second sets is equal

to the number of available tones for the image representation technique.

29. A security device as claimed in claim 28 wherein each of the first and second sets of tonal values are ranges of consecutive tones, the sum of the ranges being equal to the number of available tones in the range of tones for the image representation technique.

30. A security device as claimed in claim 28 wherein at least one of the first and second sets of tonal values comprises two or more ranges of consecutive tones.

31. A security device as claimed in claim 22 wherein the security image is formed by adding the tonal values of corresponding image elements of the first and second images so that they take values within the full tonal range.

32. A security device as claimed in claim 22 wherein the security image is formed by interleaving manipulated image elements of the first and second images, the manipulated first and second images having different tonal values to one another.

33. A security device as claimed in claim 22 comprising a plurality of images concealed within the security image in such a manner that they can each be decoded by a processing means.

34. A security device as claimed in claim 33 wherein a plurality of two tone images including at least said first image and said second image are combined and manipulated by allocating each image element of each two tone image one of the values of a bit, and

forming the security image by adding the values of the respective bits to obtain a grey scale value for

each image elements.

35. A security device as claimed in claim 34 wherein segments of a code for defining the tonal value of each image element of the security image are allocated as the sets of tonal values for respective ones of the plurality of images so that the segments can be combined to form a composite tonal value of each image element without disturbing the values of the segments so they, and hence the plurality of images, can be decoded.

36. A security device as claimed in claim 22 wherein the tonal values are grey scale values.

37. A security device as claimed in claim 22 wherein the tonal values are colour values.